station such that the transmitted signal substantially matches the polarization state of the at least one signal from the mobile station.

The Examiner has admitted that **Shapira et al.** fails to teach selecting one of a horizontal and a vertical polarization of each antenna, "so that interference of said antenna is the smaller," but has cited **Garrison** for teaching that feature.

Applicants respectfully disagree.

Garrison discloses a frequency re-use system, in which each sector has a plurality of antennas each directed to a specific direction, and the horizontal and vertical polarizations can be interspersed within each cell to provide for greater isolation between signals, and a further reduction of interference.

In contrast, claim 6 of the instant application recites a plurality of antennas to expand the total coverage area. In order to reduce the multi-path interference through reflection by a building, a polarization of each antenna is selected. In **Garrison**, a polarization of each antenna is fixed, but not selected, although the horizontal and vertical polarizations are interspersed within each cell.

Thus, the 35 U.S.C. § 103(a) rejection of claim 6 should be reconsidered and withdrawn.

(2) The 35 U.S.C. § 103(a) rejection of claim 7 as unpatentable over **Shapira et al.** in view of U.S. Patent 4,051,474 to Mack et al. (hereafter "**Mack et al.**").

Mack et al. discloses interference from polarized signals is minimized by controlling the polarization of antennas having orthogonal dipole radiating elements. The antenna system

utilizes microwave hybrids and phase shifters in a coaxial cable feed circuit that divides the power between horizontal and vertical dipole radiating elements. The circuit provides a variable antenna polarization that can be controlled to discriminate against interfering signals having any given polarization characteristics. Coaxial double folded baluns connect feed circuits to the dipole radiating elements and provide proper phasing and impedance transformation for efficient dipole operation.

The Examiner has urged that the term "controlling" in **Mack et al.** means rotating a plane of polarization in order so that interference in said antenna is a minimum as recited in claim 7 of the instant application.

Applicants respectfully disagree. Such "control" of polarization is described in column 2, lines 30-42 as feeding power to either the vertical dipole or the horizontal dipole to obtain the described vertical or horizontal polarization. This does not equate to rotation of polarization, as recited in claim 7 of the instant application.

Thus, the 35 U.S.C. § 103(a) rejection of claim 7 should be reconsidered and withdrawn.

(3) The 35 U.S.C. § 103(a) rejection of claim 8 as unpatentable over **Shapira et al.** and **Garrison** and further in view of U.S. Patent 5,735,140 to Bustamante et al. (hereafter "**Bustamante et al.**") and **Lindskog et al.** (previously applied).

The Examiner has admitted that **Shapira et al.** fails to disclose (a) the antennas being classified into groups each having a plurality of antennas, so that interference between adjacent groups is small; (b) determining a polarization plane of a first antenna in a first group; (c)

determining a polarization plane of a second antenna in a first group, said second antenna locating adjacent to said first antenna, so that a polarization plane of said second antenna is orthogonal to a polarization plane of said first antenna; (d) repeating said step (c) for other antennas; and (e) repeating said steps (b) and (c) for the antennas in other groups.

The Examiner has cited **Lindskog et al.** for teaching cells with directional antennas classified in groups each having a plurality of antennas so that interference between adjacent groups is small.

The Examiner has cited **Garrison** for teaching that horizontal and vertical polarization can be interspersed within each cell to provide for greater isolation between signals, and further reduce intra-cell interference (Col. 6; 35-38 and Col. 4; 30-53).

The Examiner has cited **Bustamante et al.** for teaching selecting an antenna with the strongest signal (Col. 2; 44-50) so one skilled in the art would envision determining if the polarization for that one antenna is horizontal or vertical and since adjacent antennas are orthogonal to one another, to keep interference to a minimum, the second antenna's polarization plane would be determined to be the opposite of the first antenna. The Examiner urged that it would be obvious to repeat steps (b) and (c) for the antennas in the other groups, so that intra-cell interference would be reduced by maintaining orthogonality of the antennas.

Applicants respectfully disagree. Column 9, claim 19 of **Lindskog et al.** discloses a system for transmitting data to reduce the "effects of fading and handling intersymbol

interference effectively." This is not the same as reducing the interference between adjacent antenna groups, as recited in claim 8 of the instant application.

Thus, the 35 U.S.C. § 103(a) rejection of claim 8 should be reconsidered and withdrawn.

The Examiner has allowed claims 3-5.

In view of the aforementioned remarks, claims 1-8 are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time and fee
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